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Religious Believes As A Predictor Of Thinking Preferences Of Muslim Hearing-Impaired Students At College Level

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Abstract:

Religious belief is presumed as a concomitant of the human tendency to assign mental processes. Religious believers are mostly intuitive thinkers. Reflective thinking has usually been found negatively associated with religious beliefs among normal individuals. The present study was carried out to a special population of hearing impaired Muslim individuals to explore the associations of their thinking preferences with religious beliefs. A sample of 215 hearing impaired adolescents (134 males & 81 females) with a mean age of 20.69 was taken from special education colleges of Lahore, Multan and Rawalpindi divisions.

To assess religious beliefs and thinking preferences, a forty items questionnaire was developed along with a demographic survey. The tool was translated into Urdu and interpreted in Pakistan sign language. The scale was administered after testing its reliability. Descriptive analysis was used to find frequencies, percentages and means. Inferential analysis was used to test hypothesis of the study. The analysis was done through SPSS 22. Independent samples t test, Pearsons correlation coefficient and multiple linear regression were employed to measure gender differences, associations and variances of religious

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beliefs along with its intrinsic, extrinsic personal and extrinsic social factors and rational or experiential thinking preferences.

The finding revealed that overall, there was no significant difference of religious beliefs and thinking preferences among male and female hearing impaired students but there was a minor difference on extrinsic social factor of religious beliefs of male and female students. Religious belief had no direct relationship with rational thinking. However, there was a weak positive relationship between religious belief and experiential thinking. Religious belief explained less variance in rational thinking but more in experiential thinking.

Keywords: *Religious belief, thinking preferences, experiential thinking, rational thinking, hearing impaired adolescents*.

Introduction:

Religious believes encompass a person's frame of mind towards supernatural, mythical or transcendent facets of religion. Most of the people around the world appear to have certain religious beliefs. Religion is a prime element that plays a vital role to effect mental and psychological pursuits of individuals.[1],[2] Two distinct aspects of religious beliefs are intrinsic and extrinsic factors. People with intrinsic beliefs adapt the religion for its own sake apart from any perceived personal gains or ends. People with extrinsic beliefs adapt the religion for either psychological or social gains.[3]Extrinsic religious beliefs incorporate extrinsic personal and extrinsic social factors.[4]

Thinking is a cognitive operation in which brain uses information from senses, memory and emotions to generate and manipulate mental representations and enables individuals to connect and integrate new experiences into existing perception. It is based on two distinct operations as dual process theories foreground that the human brain can perform two types of functions that are structurally different. These actions are labeled differently by cognitive psychologists commonly referred to as "System 1 and System 2" or "Type 1 and Type 2" processing.[512]According to Dual Process Theories, Type I processes also

[1]Levin, Jeff. "Religion and mental health: Theory and research." *International Journal of Applied Psychoanalytic Studies* 7/2 (2010): 102-115.

[2]Hefti, René. "Integrating religion and spirituality into mental health care, psychiatry and psychotherapy." *Religions* 2/4 (2011): 611-627.

[3]Allport, Gordon W., and J. Michael Ross. "Personal religious orientation and prejudice." *Journal of personality and social psychology* 5/4 (1967): 432.

[4]Brewczynski, Jacek, and Douglas A. MacDonald. "" Confirmatory factor analysis of the Allport and Ross religious orientation scale with a polish sample"." *The International Journal for the Psychology of Religion* 16/1 (2006): 63-76.

[5]Evans, Jonathan St BT. "Dual-processing accounts of reasoning, judgment, and social cognition." *Annu. Rev. Psychol.* 59/1 (2008): 255-278.

called automatic and impulsive systems, are self-determining and perform parallel functioning quickly. Type II processes also called reflective, controlled or rational systems, are passive, logical and perform functioning in serial.[3],[4]

Cognitive Experiential Self Theory of Personality (CEST) portrays a clear picture of human personality on the basis of dual processes. It is explained that two types of systems are involved in human cognitive activities. These systems are experiential system and rational system. The experiential thinking process can rapidly and proficiently direct most behavior in day to day life. It is basically affected by emotions. Because of its solid and associated nature, it is poor at managing abstract thoughts. While the rational system is logic, controlled, conscious, and slow and it needs a lot of cognitive resources.[5]

In context of Cognitive Experiential Self Theory of Personality (CEST) a study was conducted to explore relationships of religion and thinking. It was concluded that intrinsic factors lead to a constructive thinking patterns whereas extrinsic factors largely result in destructive thinking.[6]Intrinsic and extrinsic personal factors of religious orientation had a positive relationship with rational thinking but extrinsic social factor had a negative relationship with rational thinking. Overall, religious beliefs showed very low effect on rational thinking.[7]Cognitive ability, analytical cognitive styles, religiosity and sociopolitical systems show distinctive relations when all these variables are concurrently taken. Religion may be differently associated with cognitive variables.[8]

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[1]Kahneman, Daniel. "Thinking, fast and slow (1st pbk. ed.)." *New York: Farrar, Straus and Giroux* 499 (2013).

[2]Stanovich, Keith E., and Richard F. West. "Advancing the rationality debate." *Behavioral and brain sciences* 23/5 (2000): 701-717.

[3]Frankish, Keith. "Dual-process and dual-system theories of reasoning." *Philosophy Compass* 5/10 (2010): 914-926.

[4]Evans, Jonathan St BT, and Keith E. Stanovich. "Dual-process theories of higher cognition: Advancing the debate." *Perspectives on psychological science* 8/3 (2013): 223-241.

[5]Epstein, Seymour. "Integration of the cognitive and the psychodynamic unconscious." *American psychologist* 49/8 (1994): 709.

[6]Watson, Paul J., Ronald J. Morris, Ralph W. Hood Jr, Liv Miller, and Maude G. Waddell. "Religion and the experiential system: Relationships of constructive thinking with religious orientation." In *Religious Orientation and Authoritarianism in Cross-cultural Perspective*, pp. 195-208. Psychology Press, 2014.

[7]Buzdar, Muhammad Ayub, Akhtar Ali, and Riaz Ul Haq Tariq. "Religious orientations as a predictor of rational thinking among secondary school students." *Thinking Skills and Creativity* 16 (2015): 1-8.

[8]Saribay, S. Adil, and Onurcan Yilmaz. "Analytic cognitive style and cognitive ability differentially predict religiosity and social conservatism." *Personality and Individual Differences* 114 (2017): 24-29.

It is considered that religious beliefs are particularly instinctive and are natural consequences of one's cognitive structure.[1]A study found direct correlation between religious beliefs and irrational thinking process.[2]Religion is associated with irrational thinking and emotional disturbances.[3] In a series of five correlational and experimental studies, first study supported the previous research findings that analytical thinking had negative relationship with religious disbeliefs. In rest of four studies, it was experimentally assessed that religious belief decreases when analytical thinking is promoted by manipulation.[4]There was a negative association between analytical or rational cognitive style and religious beliefs. Participants involved in rational thinking were less likely to support religious beliefs.[5]

Abstract thinking starts from the early adulthood to the late adolescence that permits adolescents to reason in a broader way. At formal operational stage, adolescents can visualize and interpret logically the concepts developed in their mind. Cognitive skills capacitate the coordination and control of behaviors and thoughts. The beliefs formulated at this stage of life, affect personality formation greatly.[6]

According to the Individuals with Disabilities Education Act (IDEA), "A persistent or fluctuating damage in hearing that adversely affects an individual's educational performance" (Knoblauch, & Sorenson, 1998). In terms of levels, hearing impairment is classified as mild (26-40 dB), moderate (41-70 dB), severe (71-90 dB) and profound (90 dB-above). Hearing loss may be prelingual or postlingual and categorized as conductive, sensorineural and mixed hearing loss.[7]

Worldwide, more than a billion people exist with different disabilities. Among which five percent or 466 million people are hearing impaired.

[1]Shenhav, Amitai, David G. Rand, and Joshua D. Greene. "Divine intuition: cognitive style influences belief in God." *Journal of Experimental Psychology: General* 141/3 (2012): 423.

[2]Mora, Louis Ernesto, and Wilson McDermut. "Religious Fundamentalism and how it relates to personality, irrational thinking, and defense mechanisms." *The journal of religion & society* 13 (2011).

[3]Ellis, Albert. "Can rational emotive behavior therapy (REBT) be effectively used with people who have devout beliefs in God and religion?." *Professional Psychology: Research and Practice* 31/1 (2000): 29.

[4]Gervais, Will M., and Ara Norenzayan. "Analytic thinking promotes religious disbelief." *Science* 336/6080 (2012): 493-496.

[5]Pennycook, Gordon, James Allan Cheyne, Paul Seli, Derek J. Koehler, and Jonathan A. Fugelsang. "Analytic cognitive style predicts religious and paranormal belief." *Cognition* 123/3 (2012): 335-346.

[6]Miller, Patricia H. *Theories of developmental psychology*. Macmillan, 2002.

[7]Shearer, A. Eliot, Michael S. Hildebrand, and Richard JH Smith. "Hereditary hearing loss and deafness overview." (2017).

Approximately 432 adults and 34 million children have disabling hearing loss. Hearing impairment negatively influences individual's communication ability which eventually results in emotional disturbance and social isolation. These adverse effects may be reduced by the use of hearing aids and assistive technology. Hearing impaired individuals may communicate effectively with the help of lip reading skills, written/printed text and sign language[1]

Hearing impairment can be viewed as an encounter that limits connection from the social setup. Negative parental responses about the deafness may add to negative self and social perceptions, detachment, depression and low self-esteem.[23]The higher requirement for cognition has been related to parts of mental modification and personality such as confidence, predominance, verbal capacities, educational performance, scholastic execution, state trait anxiety, and nervousness among students at college level.[4]

The current study

Pakistan is a country that is considered to have some elements of religious extremism and radical behavior.[5]Irrational beliefs can influence the thinking process. Thinking styles and religiosity have been the favorite research topic of many cognitive and behavioral psychologists. Sufficient research has been done on logical thinking and religiosity but little research is available on religious and thinking styles of hearing impaired persons in non-western settings. Adolescence is a very important phase of human's life. At this age, college students may develop different thinking preferences and religious beliefs. It is necessary to explore different aspects of religious orientations and thinking preferences of hearing impaired adolescents in the Pakistani context.

Thinking plays an important role in different personality traits. Religious beliefs may affect thinking styles. The current study will examine the religious orientations of students in the context of thinking patterns. There are two forms of cognitive thinking i.e. rational thinking and experiential thinking. Religious orientations are based on intrinsic, extrinsic personal and extrinsic social religious

[1]Deafness and Hearing Loss." Fact sheet. Geneva: World Health Organization, 2018. https://www.who.int/news-room/fact-sheets/detail/deafness-and-hearing-loss

[2]Finn, Gail. "Developing a concept of self." *Sign language studies* 86/1 (1995): 1-17.

[3]Schlesinger, Hilde S. "A developmental model applied to problems of deafness." *Journal of Deaf Studies and Deaf Education* 5/4 (2000): 349-361.

[4]Epstein, Seymour, Rosemary Pacini, Veronika Denes-Raj, and Harriet Heier. "Individual differences in intuitive–experiential and analytical–rational thinking styles." *Journal of personality and social psychology* 71/2 (1996): 390.

[5]Leirvik, Oddbj⊘rn. "Religion in school, interreligious relations and citizenship: the case of Pakistan." *British Journal of Religious Education* 30/2 (2008): 143-154.

orientations. This study will examine religious orientations and thinking preferences and find out the relationship between religious orientations and thinking preferences on the basis of comparison between groups of hearing and hearing impaired students.

Theoretical framework of the study:

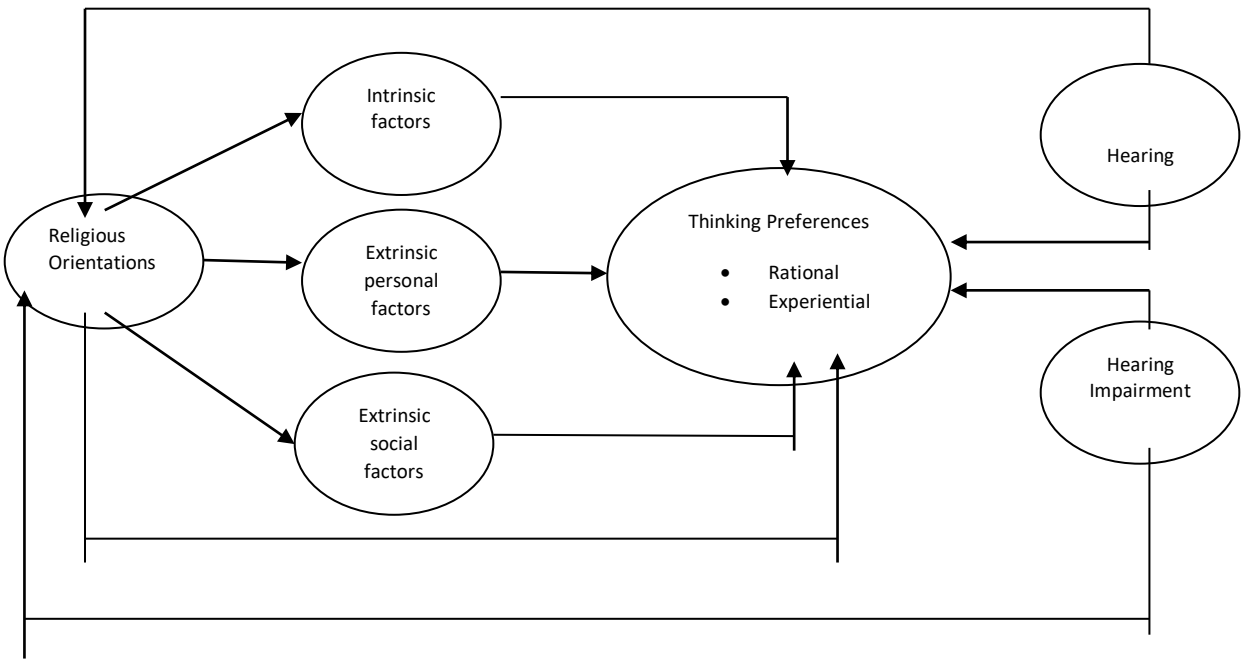

Fig. 1.1. Theoretical Framework of the study

Method:

In this study, correlation research design was used to find out the relationships among religious beliefs and thinking preferences. This correlation study was a quantitative and non-experimental approach as it measured religiosity and thinking styles of hearing impaired or deaf students studying at college level. Descriptive survey method was used to collect responses of HI students.

Participants

Population of the current study will be the hearing impaired students studying at Government Degree Colleges of Special Education, Lahore, Multan and Rawalpindi and hearing students studying at Government Degree Colleges for Boys and Girls, Lahore, Multan and Rawalpindi.

Purposive sampling technique will be used for the sample collection. Then 215 hearing impaired will randomly be selected to collect data from Government Degree Colleges of Special Education situated in district Lahore, Multan and Rawalpindi.

Measures:

The present research was conducted to explore religious beliefs along with its determinants intrinsic, extrinsic personal and extrinsic social factors and their relations to rational or experiential thinking preferences of Muslim hearing impaired students at college level in Punjab. To achieve the objectives of the research, a composite questionnaire was developed along with a demographic survey. A profuse procedure was adopted to develop scales to measure religious beliefs and thinking preferences of youth with hearing impairment.

Demographic Survey:

The researcher composed a demographic survey to collect information about specific characteristics of the respondents. Demographic survey items comprised of relevant multiple options regarding information about gender, religion, age, academic year, type and level of hearing loss, type of assistive devices, way of communication and parental hearing status. A separate sheet of demographic survey was prepared to be filled by the psychologist of each special education college to get accurate and appropriate information about hearing impaired sample (Appendix E).

Religious Beliefs Measuring Scale:

Keeping in view the specific characteristics of hearing impaired sample, the researcher developed a questionnaire comprised of 30 items (Appendix A & B) that were taken from different valid religiosity measuring scales. Team approach was used to modify the items according to the need of hearing impaired students for their better understanding to collect responses.

The researcher adopted and modified five items (1, 6, 13, 16 & 29) from Age Universal I-E Scale based on Religious Orientation Scale.[12]This scale comprised of 14 items to measure intrinsic religious factors, extrinsic personal

[1]Gorsuch, Richard L., and Susan E. McPherson. "Intrinsic/extrinsic measurement: I/E-revised and single-item scales." *Journal for the Scientific study of Religion* (1989): 348-354.
[2]LA, KIRKPATRICK. "A psychometric analysis of the Allport-Ross and Feagin measures of intrinsic-extrinsic religious orientation." *Research in the social scientific study of religion* 1 (1989): 1-30.

religious factors and extrinsic social religious factors. The distinguished feature of this scale is that it can be administered on any age group and religion. Moreover, it has been administered on Pakistani Muslim youth after validation of its Urdu Translation.[1]

Secondly, the researcher measured the intrinsic and extrinsic religiosity with four items (3, 26, 27 &28) from the Muslim Religiosity Scale. The main characteristic of this scale is that it was developed to measure Muslim religiosity in its extrinsic and extrinsic perspective.

Thirdly, the researcher took six items (2, 4, 5, 14, 15 &30) from Sahin Francis Scale of Attitude towards Islam.[2]The 23 positive items scale was adopted from Christian instrument to administer on Muslim Youth. This scale is based on religious practices and belief in Allah, Qurʾān and prayer.

Fourthly, the researcher adopted five items (9, 10, 11, 24, &25) from the Religiosity among Muslims Scale.[3]

Fifthly, the researcher adopted and paraphrased four items (7, 8, 12 & 17) from Psychological Measure of Islamic Religiousness (PMIR).[4] It is a 70 items scale which includes two sets of religious dimensions that are Core Islamic Religious Dimensions and Non-Specific Religious Dimensions.

Finally, the researcher adopted and paraphrased six items (18, 19, 20, 21, 22&23) from The Muslim Religiosity-Personality Inventory (MRPI).[5]

Thinking Preferences Measuring Scale:

To assess the rational and experiential thinking preferences of hearing impaired sample, the researcher developed a questionnaire comprised of 10

[1]Khan, Ziasma Haneef, Paul J. Watson, and Zhuo Chen. "Muslim spirituality, religious coping, and reactions to terrorism among Pakistani university students." *Journal of Religion and Health* 55/6 (2016): 2086-2098.

[2]Francis, Leslie J., Mustafa Tekke, and Mandy Robbins. "The psychometric properties of the Sahin-Francis Scale of Attitude towards Islam revised among Sunni students in Malaysia." *Mental Health, Religion & Culture* 19/5 (2016): 433-439.

[3]Mohd Mahudin, Nor Diana, N. Mohd Noor, Mariam Adawiah Dzulkifli, and N. Shari'e Janon. "Religiosity among Muslims: A scale development and validation study." *Makara Human Behavior Studies in Asia* 20/2 (2016): 109-120.

[4]Abu Raiya, Hisham, Kenneth I. Pargament, Annette Mahoney, and Catherine Stein. "A psychological measure of Islamic religiousness: Development and evidence for reliability and validity." *The International Journal for the Psychology of Religion* 18/4 (2008): 291-315.

[5]Krauss, Steven Eric, Azimi Hamzah, Rumaya Juhari, and J. A. Hamid. "The Muslim Religiosity-Personality Inventory (MRPI): Towards understanding differences in the Islamic religiosity among the Malaysian youth." *Pertanika Journal of Social Sciences & Humanities* 13/2 (2005): 173-186.

items (Appendix A & B) that was a combination of Rational Experiential Inventory REI-A.[1]

Rational Experiential Inventory REI-A is a reliable tool to assess individual differences in cognitive thinking preferences of adolescents based on rational and experiential thinking styles. This 20 items scale was specifically developed for adolescents to get their responses about preferences for experiential and rational thinking.

The researcher modified five items (31, 32, 33, 34 & 35) from Rational Experiential Inventory REI-A to assess student's rational thinking preference. The researcher modified and paraphrased five items (36, 37, 38, 39 &40) from Rational Experiential Inventory REI-A.[2]

Finally, the researcher combined 30 items of religious beliefs measuring scale and 10 items of thinking preferences measuring scale and developed a 40 items questionnaire to administer on hearing impaired adolescents studying at college level.

Translation of the Instrument:

Researcher translated the Religious beliefs &thinking preferences measuring scale into Urdu (Appendix F & G) with the help of English and Urdu language experts. Then back translation method was adopted to compare the translated version with the original English version. Further, Urdu translated questionnaire consisting of 40 items was interpreted in Pakistan Sign Language by the help of sign language experts for the convenience and better understanding of hearing impaired students.

Validity and Reliability of the Instrument:

The instrument was validated by a team of professionals and experts. The instrument was finalized after a series of scrutiny process before its application. The experts checked face and content validity of the questionnaire. Finally, after a thorough discussion on each and every aspect of questionnaire, the experts validated the scale to apply on deaf students.

[1]Marks, Anthony DG, Donald W. Hine, Rebecca L. Blore, and Wendy J. Phillips. "Assessing individual differences in adolescents' preference for rational and experiential cognition." *Personality and Individual Differences* 44/1 (2008): 42-52.

[2]Shirzadifard, Maysam, Ehsan Shahghasemi, Elaheh Hejazi, Zahra Naghsh, and Ghafar Ranjbar. "Psychometric properties of rational-experiential inventory for adolescents." *SAGE Open* 8/1 (2018): 2158244018767219.

To check the reliability of the scale, researcher conducted a pilot study on 22 students from sample. The data gathered for pilot study was not included in final analysis. On SPSS version 22, the researcher performed reliability analysis. The reliability coefficient for the questionnaire indicated that the questionnaire was suitable for its application in this research. The detail of Cronbach's Alpha is given in Table 3.3.

Table 1.1

Reliability of questionnaire

Subscales & Scales	Items	Cronbach's Alpha	Status
Intrinsic religiosity	11	0.81	Good
Extrinsic personal religiosity	09	0.71	Acceptable
Extrinsic social religiosity	10	0.70	Acceptable
Religious belief scale (overall)	30	0.80	Good
Rational thinking	05	0.72	Acceptable
Experiential thinking	05	0.80	Good
Thinking preferences scale (overall)	10	0.84	Good
Religious belief & thinking preferences scale (combined)	40	0.75	Acceptable

Procedure:

Partial Least Square method of Structural equation modeling (PLS-SEM) was employed to analyze the research model. SEM-PLS has recently gained researchers attention as analysis technique due to its robustness in analyzing models with low sample size and data that violates the assumption of multivariate assumption.[1]For the hypothesized model, we analyzed the measurement model for reliability (composite reliability), convergent validity (factor loading and average variance extracted) and discriminant validity (Fornel-Larcker Criteria). Next, we analyzed for recommended statistics of structural model which include variance inflation values, coefficient of determination (R^2), effect size (F^2) and significance of path coefficients using 1000 bootstraps. All the analysis was done using SMART PLS 3.[2]

Results and Findings:

Common Method Bias

Common method bias arises if variations in responses are caused due to the measures used rather than the characteristics of the constructs that the instruments are measuring. Normally common method bias in the data is detected using (Harman) one factor tests.[3] A principal component analysis with varimax rotation was used to identify for CMB in the data. All the items were loaded onto a single factor. The results revealed that all the items collectively explained 14.9% of variance which is well below the maximum value of 50%. Therefore, CMB is not an issue in this study.

Measurement Model Analysis:

Composite reliability was used to determine the reliabilities of the measures of each construct.[4] For composite reliability, the threshold value is 0.70.[5]As we can

[1]Hair, Joe F., Christian M. Ringle, and Marko Sarstedt. "PLS-SEM: Indeed a silver bullet." *Journal of Marketing theory and Practice* 19/2 (2011): 139-152.

[2]Ringle, Christian M. "Partial least squares structural equation modelling (PLS-SEM) using SmartPLS 3." *Computational data analysis and numerical methods VII WCDANM. Portugal* (2015).

[3]Podsakoff, Philip M., Scott B. MacKenzie, Jeong-Yeon Lee, and Nathan P. Podsakoff. "Common method biases in behavioral research: a critical review of the literature and recommended remedies." *Journal of applied psychology* 88/5 (2003): 879.

[4]Peterson, Robert A., and Yeolib Kim. "On the relationship between coefficient alpha and composite reliability." *Journal of applied psychology* 98/1 (2013): 194.

[5]Hair, Joseph F., William C. Black, Barry J. Babin, and Rolph E. Anderson. "Multivariate data analysis." (2019).

see from the table, all of the constructs in the study were above the threshold criteria and range between 0.71 to 0.86.The convergent validity of the study constructs was evaluated using Average Variance Extracted (AVE) values. The recommended cut-off values of AVEs are 0.50.[1]As it can be seen , for some of the constructs(Intrinsic religiosity, extrinsic religiosity and thinking preference experiential) AVE values were slightly below the cutoff value of 0.5. Nevertheless, since our composite reliability values were high, following the recommendation in the literature, we can retain these slightly low AVE values as well.

Item wise loadings, CR and AVE values

	Loadings	Composite Reliability	AVE
Intrinsic Religiosity		0.86	0.471
RBEP_1	0.726		
RBEP_2	0.786		
RBES_3	0.702		
RBI_1	0.642		
RBI_11	0.621		
RBI_3	0.554		
RBI_4	0.744		
Religious Practices		0.826	0.616
RBI_10	0.894		
RBEP_4	0.706		
RBEP_5	0.743		
Extrinsic Religiosity		0.782	0.473
RBEP_7	0.719		
RBEP_8	0.685		
RBES_1	0.672		
RBES_2	0.675		
Social Religiosity		0.827	0.5
RBES_10n	0.714		
RBES_4	0.799		
RBES_5	0.723		

[1]Sarstedt, Marko, Christian M. Ringle, and Joseph F. Hair. "Partial least squares structural equation modeling." In *Handbook of market research*, pp. 587-632. Cham: Springer International Publishing, 2021.

RBES_7N	0.476		
RBES_8	0.761		
Religious Beliefs		0.717	0.56
RBI_2	0.754		
RBI_5	0.741		
Thinking preference experiential		0.711	0.465
TPE_2	0.652		
TPE_3	0.47		
TPE_5	0.866		
Thinking preference Rational		0.859	0.55
TPR_2	0.828		
TPR_5	0.67		
TRP_1n	0.731		
TRP_3n	0.686		
TRP_4n	0.782		

We established discriminant validity using the criteria that square root of AVE values of a construct should be greater than the correlation of that construct with other variables. [1]

Discriminant values:

	1	2	3	4	5	6	7
1.Extrinsic Religiosity	**0.688**						
2.Intrinsic Religiosity	0.368	**0.686**					
3.Religious Beliefs	0.296	0.256	**0.747**				
4.Religious Practices	0.136	-0.054	0.305	**0.785**			
5.Social Religiosity	0.238	-0.011	0.168	0.504	**0.704**		
6.Thinking preference experiential	0.434	0.484	0.252	-0.125	0.233	**0.682**	
7.Thinking preference Rational	0.429	0.106	0.25	0.416	0.603	0.318	**0.7**

Diagonals (in bold) represents square root of AVE while off diagonals represent correlations

[1]Fornell, Claes, and David F. Larcker. "Structural equation models with unobservable variables and measurement error: Algebra and statistics." (1981): 382-388.

Structural model analysis:

	Beta	T Statistics	P Values
Extrinsic Religiosity -> Thinking preference experiential	0.232**	3.883	0
Extrinsic Religiosity -> Thinking preference Rational	0.288**	5.217	0
Intrinsic Religiosity -> Thinking preference experiential	0.345**	4.649	0
Intrinsic Religiosity -> Thinking preference Rational	0	0.002	0.499
Religious Beliefs -> Thinking preference experiential	0.146	1.625	0.052
Religious Beliefs -> Thinking preference Rational	0.047	0.852	0.197
Religious Practices -> Thinking preference experiential	-0.35**	4.232	0
Religious Practices -> Thinking preference Rational	0.13*	2.075	0.019
Social Religiosity -> Thinking preference experiential	0.333**	4.226	0
Social Religiosity -> Thinking preference Rational	0.461**	8.222	0
R^2(Thinking preference experiential)	.411		
R^2(Thinking preference Rational)	.453		
Q^2(Thinking preference experiential)	.159		
Q^2(Thinking preference Rational)	.242		

The standardized path coefficients indicated that Extrinsic religiosity, intrinsic religiosity and social religiosity are positively related to thinking preference experiential (TPE) while religious practices are negatively related. We could not find significant relationship of religious beliefs with TPE. In the same manner we found that extrinsic religiosity, religious practices and social religiosity are positively related to thinking preference rational (TPR). No influence of intrinsic religiosity and religious beliefs on TPR. The coefficient of determination (R^2) indicated that all the independent variables explained 41% of variation in TPE and 45% of variation in TPR. Q^2 value above zero indicated enough predictive relevance.

Discussion:

This study examined the relationship between various dimensions of religiosity and thinking styles among deaf Muslim college students. The findings revealed that extrinsic religiosity, intrinsic religiosity, and social religiosity were positively associated with experiential thinking preference (TPE), whereas religious practices were negatively associated. Interestingly, overall religious beliefs did not show a significant relationship with TPE. These results suggest that while different forms of religiosity may enhance intuitive and emotion-based thinking, strict ritual practices may instead promote structured discipline, thereby reducing reliance on experiential thought.

For rational thinking preference (TPR), the results indicated that extrinsic religiosity, social religiosity, and religious practices were positively related, while intrinsic religiosity and general religious beliefs showed no influence. This suggests that social and external aspects of religiosity, along with routine practices, may encourage students to adopt logical and systematic thinking styles. The coefficient of determination values indicated that 41% of the variance in TPE and 45% of the variance in TPR were explained by the independent variables. In addition, Q^2 values above zero confirmed adequate predictive relevance of the model.

Future Implications:

The findings have important implications for education and policy in Pakistan. Since religion plays a central role in the cultural and educational environment, understanding how religiosity shapes cognitive styles can help educators design more effective teaching strategies for deaf students. Classroom practices should aim to integrate both rational and experiential learning opportunities, acknowledging that students may differ in their cognitive preferences based on their religiosity.

Religious institutions and community networks can also contribute by promoting social religiosity and supportive engagement, which appear to positively influence both experiential and rational thinking. Policymakers should ensure that special education curricula consider the cultural significance of religiosity while addressing the cognitive and learning needs of deaf students. This alignment may not only enhance academic outcomes but also strengthen social and emotional well-being.

Limitations and Future Research:

While this study offers meaningful insights, some limitations should be noted. The sample was limited to deaf Muslim college students, which may restrict the generalizability of the findings. Moreover, the cross-sectional design does not allow for causal interpretations of the relationships observed.

Future research in Pakistan could expand this work by including larger and more diverse samples, incorporating both public and private institutions, and exploring gender-based differences. Longitudinal studies may also provide a deeper understanding of how religiosity interacts with cognitive development over time.

Conclusion:

In summary, the study highlights that religiosity influences cognitive styles in nuanced ways among deaf Muslim college students in Pakistan. Extrinsic, intrinsic and social religiosity foster experiential thinking, while extrinsic religiosity, social religiosity, and religious practices promote rational thinking. These results emphasize the importance of considering cultural and religious contexts in special education and underline the potential of religiosity as a resource for shaping both intuitive and logical cognitive orientations.

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